

REMARKS/ARGUMENTS

Claims 1-10, 14-16, 20-27, and 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over House et al. (5,274,783) (hereinafter House) in view of Wills et al. (6,002,692) (hereinafter Wills). Claims 11-13, 17-19, 28-30, and 35-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

No claims have been amended.

Claim Rejections -35 USC § 103

The office action rejects claims 1-10, 14-16, 20-27, and 31-34 under 35 U.S.C. § 103(a) as being unpatentable over House in view of Wills. The Examiner states:

Applicant's arguments filed 10/21/2004 have been fully considered but they are not persuasive.

In the remarks applicants argued:

A. House does not disclose the existence of multiple independent data stream.

B. House does not disclose establishing the thread identifier for each independent data.

C. House does not disclose actually issuing data transfers not associated with thread identifier.

...

Examiner notes that while specific references were made to the prior art, it is actually also the prior arts in its entirety and the combination of the prior arts in its entirety that is being referred to.

Examiner notes that it is the Applicant's claims [words?] as stated in the Applicant's claims that are being rejected with prior art. For example, the "data streams" of claim 1 is interpreted as a 'signals'. Signals being transmitted are information. They can be spoken words such as telephone conversation, music, or even computer data. 'thread identifier' is interpreted as 'connection identifier' or unique identifier, all of these terms are well known in the inter-process communication art.

(Office Action dated 3-11-05, pages 6-8)

However, applicant respectfully asserts that claim 1, as amended, is not obvious under 35 U.S.C. § 103(a) in view of the combination of House with Wills.

The law requires:

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Manual of Patent Examining Procedure ¶ 2143).

Further, the law also requires:

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by proposed combination of the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). (Manual of Patent Examining Procedure (MPEP) ¶ 2143.03).

The first point is patent law requires the combination of the references themselves to disclose each and every limitation in applicant's claims to render those claims obvious under section 103. Further, the Examiner is required to particularly point out where these limitations are disclosed in the prior art document. Thus, if the office action makes a specific reference to where a claim limitation is disclosed in prior art document and in fact that limitation is not disclosed in that reference, then the office action is not satisfying the requirements of section 103. Also, a limitation maybe inherently disclosed under 103 if the Examiner makes a proper evidentiary finding. However, the office action's statement "Examiner notes that while specific references were made to the prior art, it is actually also the prior arts in its entirety and the

combination of the prior arts in its entirety that is being referred to” does not satisfy that evidentiary requirement.

Next, applicant traverses the Examiner’s stated conclusions on the meaning of the terms “threads” and “thread ids” with evidence from various dictionaries and articles by people skilled in the art concerning what the two above terms generally convey. Applicant submits definitions of the term “thread” from the following four technical websites and one standards body: 1) Geek.com; 2) Whatis.com; 3) Webopedia.com; 4) Techweb.com; and 5) the Open Core Protocol Specification version 2.0 published by the OCP-IP standards organization. Applicant submits articles on multi-threading from: 1) Sun Microsystem’s article on multi-threading that discusses threads in JAVA software environment; 2) a Computer Programming Thread FAQ; and 3) again the Open Core Protocol Specification version 2.0 published by the OCP-IP standards organization. The entire Open Core Protocol Specification document is relevant to a person’s skilled in the art understanding of the above terms but applicant specifically directs the Examiner’s attention to pages 10, 19, 20, and 46 of this large document.

The seven references discussing threads and multi-threading all differ slightly but convey a common theme. The theme is that a “thread” can be thought as 1) a series of communication exchanges, usually involving data, in related transaction between an initiating device to a target device and/or 2) a part of a single program that runs independently and/or simultaneously along with other threads from that program to accomplish a specific task. Either way, a single source device/application may have two or more threads in progress at the same time.

Similarly, applicant traverses the office action's stated conclusions on the meaning of "data stream" with evidence from various dictionaries by people skilled in the art concerning what the term generally conveys. Applicant submits definitions of the term "data stream" from the following technical website, standards body, and the Willis reference cited by the Examiner in this office action: 1) Techweb.com; 2) the American National Standard's Telecom glossary; and 3) the Willis reference describes a SONET STS-48 data stream at Col. 4 Ln. 62 to Col. 5 Ln. 14.

The three references discussing the term "data stream" all differ slightly but convey a common theme. The theme is that a "data stream" can be thought as "a sequence of encoded information in a transmission from one place to another."

In general, the applicant re-directs the Examiner to the past arguments in the previous office action because applicants re-argue:

- A. House does not disclose the existence of multiple independent data stream between an initiating device and a target device.
- B. House does not disclose establishing the thread identifier for each independent data stream.
- C. House does not disclose actually issuing data transfers not associated with busy thread identifier from the initiator while withholding issuance of data transfers associated with the busy thread identifier.

For example, the Examiner again cites House at Col. 9 Lns. 10-36 as disclosing "the initiator functional block withholding issuance of data transfers associated with the thread identifier in response to the issued busy signal, wherein data transfers not associated with the thread identifier identified by the issued busy signal may be issued."

The Examiner states:

if the target functional block is unable to accept a data transfer from the initiator functional block (col. 9, lines 10-25), the target functional

block issuing a busy signal identified by the thread identifier (col. 9, lines 25-36);

the initiator functional block withholding issuance of data transfers associated with the thread identifier in response to the issued busy signal (col. 9, lines 20-36), wherein data transfers not associated with the thread identifier identified by the issued busy signal may be issued (col. 9, lines 25- 36)

(Office Action dated 3-11-05, page 7)

Applicants assert the House does not disclose that the same initiator withholds issuance of data transfers associated with the busy thread identifier and allows the issuance data transfers from a data stream that are not associated with the busy thread ID. House merely discloses arbitration between two devices to obtain control of a bus and the subsequent establishment of a communication link between the initiating host and a target. The control logic allows the establishment of a communication link between the first initiating device and a first target while issuing a busy signal and blocks transactions from any additional initiating devices.

Accordingly, House discloses arbitration between two devices, a host computer 14 and an extender 30 to obtain control of a bus:

To transfer messages, the host computer 14 attempts to gain control of the main bus 26 during what is called the ARBITRATION phase by asserting the BUSY line ("bsy") at "a" in part 7A of the drawing, and asserting the host computer's own ID on the data lines ("dbn") at "b." (In SCSI buses, there are, e.g., eight data lines, one corresponding to each of the ID's (i.e., ID.sub.-- 0-ID.sub.-- 7) that can be assigned to devices on the bus. Thus, for example, to assert ID.sub.-- 6, the sixth data line is driven HIGH.)

If at the time the host computer 14 is attempting to control the main bus 26, any other device or devices are likewise attempting to do so, the bus is deemed to be in contention. In that case, according to the SCSI standards, the contending device with the highest ID is given priority. Thus, for example, if the extender 30 were also attempting to control the main bus 26, the control logic 50 would assert BUSY and the extender's ID, i.e., ID.sub.-- 0, on the data lines. Since, the computer's ID.sub.-- 6 is

higher than the extender's ID.sub.-- 0, the extender 30 would fall off the main bus 26, and the host computer 14 would gain control of the main bus 26 by asserting the SELECT line ("sel"). If there are no contenders for the bus, then the host computer 14 simply can assert "sel," as shown at "c." This finishes the main-bus ARBITRATION phase.

(House Col. 8 Ln. 62 to Col. 9 Ln. 9)

House then next discloses that the initiating device, host computer 14, establishes a communication link with a target, one of the auxiliary-bus peripheral devices 24. A busy signal is asserted on the main bus during the establishment of this communication link. House discloses:

Now, the host computer 14 attempts to establish a communication link with a target on the main bus 26 within what is called the SELECTION phase by sending a first connection control signal over the data lines ("dbn") as shown at "d," which signal gives both the host computer's own ID as the initiator and the target's ID on the main bus 26. Consequently, two of the data lines are asserted--the two corresponding to the host computer and the target. In addition, the correct parity for the asserted data bits, i.e., in this case, a HIGH value, is maintained on the data parity line ("dbp"). In other words, dbp is asserted at "e.". Moreover, another signal line, the I/O control line ("i/o"), is deasserted to indicate SELECTION. (Assertion of the i/o line indicates RESELECTION.) Afterwards, the initiator also deasserts BUSY at "f."

In order to illustrate the invention, we will assume that the target ID asserted during SELECT is that of the bus extender 30, e.g., ID.sub.-- 0, which means that the host computer 14 is attempting to communicate with one of the auxiliary-bus peripheral devices 24. Accordingly, during SELECT, the control logic 50 of the extender 30 identifies the target as ID.sub.-- 0, and verifies that SELECT is asserted and that BUSY is deasserted. In addition, the control logic 50 verifies that the parity is correct, and that there are two, and only two, bits asserted on the dbn lines.

Once the extender 30 has confirmed that it is the target, the extender accepts SELECTION by asserting BUSY on the main bus 26, as shown at point "g" in FIG. 5. In response to the acceptance, the host computer 14 deasserts SELECT at "h."

(House Col. 9 Lns. 10-41)

Applicants assert the House in the above section cited by the office action does not disclose that the same initiator withholds issuance of data transfers associated with the busy thread identifier and allows the issuance data transfers from a data stream that are not associated with the busy thread ID. House merely discloses arbitration between two devices to obtain control of a bus. House then discloses the subsequent establishment of a communication link between the initiating host and a target while issuing a busy signal and blocks transactions from any additional initiating devices.

In contrast, claim 1 states that a plurality (i.e. two or more) independent data streams may be in progress between the initiator functional block and the target functional block at the same time. Because of this limitation, a thread identifier is established for each independent data stream between an initiator functional block and a target functional block. Further, because of this limitation, if the target functional block is unable to accept a data transfer from the initiator functional block, then the target functional block issues a busy signal identified by the [busy] thread identifier. The same initiator withholds issuance of data transfers associated with the busy thread identifier and allows the issuance data transfers from a data stream that are not associated with the busy thread ID. In the above cited sections of House, the host computer 14 does not actually issue even one data transfer yet alone withhold issuance of data transfers associated with the busy thread identifier.

With respect to the other limitations in claim 1 not disclosed by House applicant refers the Examiner to the previous office action because applicant arguments are the same.

Applicant again raises the fact that Wills does not disclose meeting service guarantees on a per thread identifier basis because the current office action did not address this point.

Claim 1 states:

mapping a data flow from the initiator functional block to the target functional block to a thread indicated by the thread identifier to meet a service guarantee on a per thread identifier basis

(Emphasis added)

Wills does not disclose meeting service guarantees on a per thread identifier basis. Wills discloses:

The converter also splits the traffic into multiple priorities so as to assure quality of service (QoS) for timing critical traffic.

(Wills, col. 5, lines 19-21)

Wills discloses a method for ensuring quality of service by solely prioritizing traffic. Wills discloses splitting traffic to meet a quality of service guarantee, but does not differentiate between two data streams originating from the same functional block yet belonging to two different thread identifiers. Hence, Wills does not teach or suggest does not disclose meeting service guarantees on a per thread basis. If a reference does not discuss a limitation then the reference cannot teach or suggest that limitation.

Applicant again raises the fact that office action provides inadequate motivation to properly combine the references under 35 U.S.C. § 103. Patent law requires that the evidence for the motivation to combine references under 35 U.S.C. § 103 must come from either 1) within the references themselves or 2) make articulated findings of fact regarding: A) the level of skill in the art; B) the relationship between the fields of the cited art; and C) the particular features of the prior art references that would motivate

one of ordinary skill in applicant's particular art to select elements disclosed in references. See In re Lee, 277 F.3d 1338, 1344 (Fed. Cir. 2002), In re Thrift, 298 F.3d 1357, 1361 (Fed. Cir. 2002), In re Dembiczak, 175 F.3d 994 (Fed. Cir. 1999), and the Manual of Patent Examining Procedure section 2143. The office action merely states that:

House does not specifically disclose to meet a service guarantee on a per thread identifier basis.

However, Will discloses to meet a service guarantee on a per thread identifier basis (col. 5, lines 19-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Will with House because it would provide a guaranteed throughput.

(Office Action dated 3-11-05, pages 3-4)

Paraphrasing the above language of the office action, Reference A does not disclose limitation X but Reference B does and its obvious to combine them to achieve a result, presumed by law, found in applicant's patent application. The office action cites to no hints or suggestions in either reference that actually suggests the combination of these two references. The office action does not make an articulated findings of fact. Therefore, on this basis alone, applicant respectfully submits that a presumed inexpressible use of hindsight has occurred and the obviousness rejection of claim 1 has been overcome.

With all due respect, the prosecution of this case on its merits has been exhausted. The time has come to allow these claims. In the previous response, the applicant responded to the same issues as well as unwarranted 35 USC 112 rejections. In other responses, the applicant has overcome a different set of cited prior art references.

Applicant respectfully submits for all of the reasons discussed above claims 1-36 are not obvious under 35 U.S.C. § 103(a) over House in view of Wills.

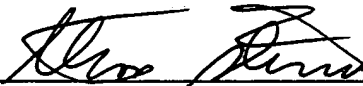
Conclusion

It is respectfully submitted that in view of the amendments and remarks set forth herein, the rejections and objections have been overcome. **An Information Disclosure Statement is also submitted with this amendment. A Notice of Appeal is submitted with this response.** Applicants reserve all rights with respect to the application of the doctrine equivalents. If there are any additional charges, please charge them to our Deposit Account No. 02-2666. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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